For slags in basic open-hearth furnaeeH which are deliberately created from natural iron oxidoH brought into contact with metallic iron, recently more examples have boon brought forth, derived from the pig-ore process with molten charges.
Dr. Ing. Th. Naske gives in " St. u. M.," 11)07, p. a«l, Table 6, the analysis of a slag prepared from iron oxido and limestone, which had made its appearance thirty minutes after pouring molten pig iron into a furnace. The slag contained:—
FeO 47-88 per cent., FeaOa tt'10 per cumt, Mn 15-22 per cent., Si(>2 17*68 per cent., P^A 2'8(5 por cent.
A slag similarly produced, in which tho eonttmt of lime and magnesia is also given (ibid^ p. 207), contained :-•—
Fe 36-05 per cent., Mn 15-01 por cent., Si()a 20*85 per cent., CaO 11*50 per cent., MgO 1-20 por cent., l^()tt l-4[) por cent.
Here also the chief constituent is ferrous oxido, which, with iron peroxide, is dissolved in an iron wlieato.
The slag formed at the commencement of tho proeosH docs not retain its high iron content long, sinco tlui metallic, oxidtm are gradually reduced down to small amounts by tho reducing agents in the4iron, whereby the fluidity of Urn slag is not substantially lowered.
On the attainment of a stato of equilibrium between metal and slag, the metallic, oxido content of the latter will manifestly be the smaller, tho more reducing agentH are present in the metal
It is doubtless of great intorcmt to know tho conditions for such an equilibrium; unfortunately, howovor, no Hcientifie investigations thereon have boon pronontod. One can novor-theless obtain data from tho available examples from open-hearth furnace practice, which are able to render good service as approximations.
On p. 175, Table P, are set out analygcie of fllag«, which have been a long time in contact with metal and have no longer exercised specially perceptible influence thereon, in all cases the reaction had thrived BO far that it had been found necessary to interrupt the process, or to make further attack. The slags have occurred in bade furnacoH of tho nuwl different systems, and in the most different part® of the world, and one